

ABSTRACT OF THE DISCLOSURE

The present invention provides a process for the hydrogenation of a polymer under supercritical conditions. A reaction mixture of hydrogen, at least one polymer, at least one hydrogenation catalyst, and appropriate solvent(s) for the at least one polymer and catalyst is provided and is pressurized and heated to meet or exceed a determined critical pressure and determined critical temperature for the reaction mixture. The hydrogenation occurs under these supercritical conditions, thereby overcoming the hydrogen solubility and mass transfer problems typically encountered in hydrogenation methods at subcritical conditions, wherein hydrogen must be pressurized into solvent to reach the polymer.